CHINESE LUBRICANT ADDITIVE SUPPLIER RICHFUL KEEPS RUSSIA'S WAR MACHINE RUNNING

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Chinese Lubricant Supplier Richful Keeps Russia's War Machine Running

Russia is dependent upon the Chinese chemicals company Xinxiang Richful Lube Additive Co., Ltd. to sustain Russian production of motor oil and other mechanical lubricants for commercial and military vehicles.

- The lubricant additive industry is dominated by U.S. and UK companies, and Russia experienced a lubricant shortage after these companies stopped servicing Russian clients in 2022 in response to the Russian invasion of Ukraine.
- A single Chinese company, Xinxiang Richful Lube Additive Co., Ltd, is responsible for most current exports to Russia of this important class of chemicals.
- Richful's leading customer in Russia is Gazpromneft Lubricants (GPN-SM), a subsidiary of the Russian energy giant that produces lubricants for the Russian military.
- Richful is expanding its operations globally. In the United States, it opened a subsidiary located three miles from Newport News Shipbuilding.

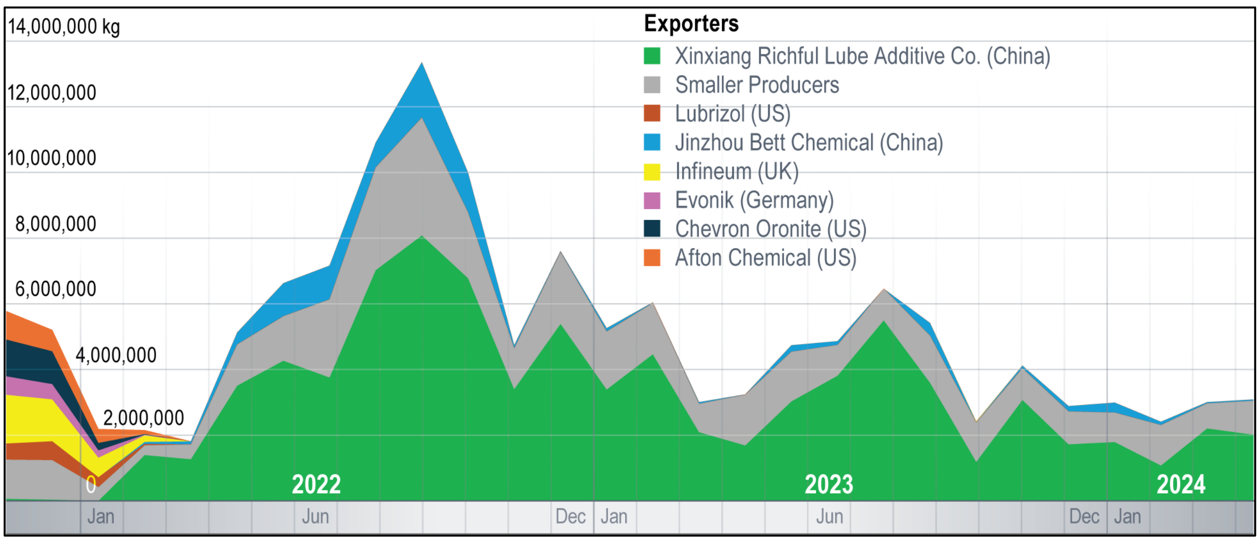

Figure 1: Imports of oil additives (HS 3811210000) to Russia between January 2022 and April 2024. Note that the Western companies pulled out, to be mostly replaced by Richful. Source: Exovera Trade Data Holdings.

Introduction: Russia's Lubricant Additive Crisis

While Russia possesses a vast supply of crude oil, it has a limited production capacity for critical ingredients in mechanical lubricants. Although commonly referred to as "oil," mechanical lubricants are actually a mix of oil and a wide variety of different specialized chemicals, polymers, and minerals called "lubricant additives." Unable to produce enough of these lubricant additives to meet domestic demand, Russia must import an enormous amount of the additives to maintain its lubricant production for civilian and military use. According to a letter of complaint from the Vice-President of the Russian National Automobile Union to the Prime Minister, before Russia's invasion of Ukraine, imports accounted for 60% of the oil additives consumed in Russia, and up to 90% of the more complex additives.[1] In 2021, before the invasion, Russia imported about 5,000 metric tons of lubricant additives each month.

Four Western companies produce most the world's lubricant additives: Infineum (UK), Lubrizol (US), Afton Chemical (US), and Chevron Oronite (US).[2] In the industry, these companies are known as the "Big Four." Like many other U.S. and UK companies, the Big Four ceased serving Russian customers after the country's invasion of Ukraine in February 2022. This exit resulted in a severe lubricant shortage within Russia that is well documented in press reporting.[3] Within months of the invasion, Russian media reported wide-scale shortages of engine lubricants leading directly to breakdowns and mechanical failures.[4] Russian motorists—particularly freight drivers—have been complaining about a lack of motor lubricant.[5] By 2023, the Russian market was reportedly awash in counterfeit motor oils. As one Russian lubricant industry analyst explained in January 2023: "Due to the shortages and chaos of supply, in both base oils and additives, and chemical components, we can say that there are practically no authentic old [lubricant] products on the market."[6] [7]

In December 2023 the U.S. Office of Foreign Assets Control (OFAC) issued a determination that any foreign financial institution would be subject to sanctions pursuant to Executive Order 14024 if they were involved in delivering a range of industrial items to Russia – including turbine lubricants and turbine lubricant additives.[8] This demonstrates the U.S. Government's recognition that these items directly contribute to the Russian war effort. Russia's T-80 tank, for example, is powered by a gas turbine engine, which would require turbine lubricant to run. If Russia cannot source or produce turbine lubricants, entire classes of weapons would become effectively disabled. More broadly, difficulty sourcing other kinds of lubricants, such as lubricants for diesel or piston engines would directly impact Russia's ability to conduct mechanized operations of any kind, as well as the basic functionality of Russia's civilian economy as a whole. While not as dramatic as a fuel shortage would be, severe mechanical lubricant shortages would significantly degrade Russia's ability to wage mechanized warfare in Ukraine by rapidly increasing wear-and-tear on vehicles and machinery of all kinds.

Richful Lubricant Additives: The Chinese Replacement for American Additives

Since the invasion of Ukraine, Russia has mostly replaced general lubricant additives made by American companies with products from China, with the largest supplier being Xinxiang Richful Lube Additive Co., Ltd. ("Richful"), a publicly traded company listed on the Shenzhen Stock Exchange (SZ300910) and based in Henan Province.[a][9][10] As demonstrated above by analysis of Exovera's trade and import data holdings, Richful is now the primary provider of oil additives to Russia. This market share likely makes Richful a single point of failure for the Russian war economy.

[a] Richful was founded in 1996 and went public in November 2020. The company's Unified Social Credit Code is 914107006149375190. Richful is listed on the Shenzhen Stock Exchange as 瑞丰新材 with stock code 300910. A literal translation of the company's name would be "Xinxiang Ruifeng New Materials Co., Ltd."

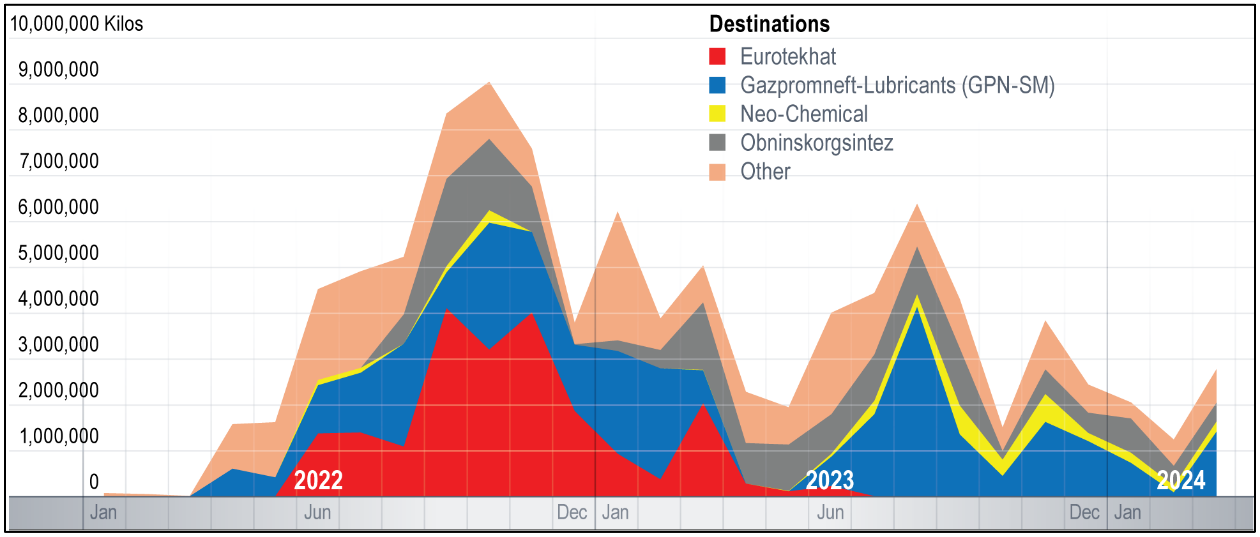

Figure 2: Russian importers from Xinxiang Richful Lubricant Additive Co., in kg of total imports. Aggregated by month. Source: Exovera Trade Data Holdings.

The primary importer of Richful products over the last two years has been Gazpromneft Lubricants (GPN-SM). GPN-SM is one of the largest producers of lubricants in Russia, with a 22% share of the Russian market for lubricants as of 2019.[11] GPN-SM also produces lubricants and fuels certified for use in Russian military vehicles, according to a Russian Ministry of Defense list from 2020.[12] For example, one of the military-certified variants of lubricant greases designated “Lithol-24” is produced by GPN-SM at Gazpromneft’s Omsk refinery.[13] The company’s commercial offering of Lithol-24 on its public website states that the lubricant grease can be used in a number of applications, including rolling and sliding bearings, gears, and on “friction surfaces of wheeled and tracked vehicles.”[14] The webpage also states that Lithol-24 is produced with oil, lithium soap, and “a high-performance additive package.”[15]

Richful Breaking Dependencies on U.S. & UK Producers through Sanctions Backfilling and Reverse Engineering

Richful claims that its strategic purpose is to compete in the Western-dominated lubricant additive market. There are four major lubricant additive plants in China, but each is owned by one of the Big Four.[16] To break this dependency on Western producers of lubricant additives, Richful is pursuing an import substitution strategy and derives the majority of its revenue from exports,[b] including to countries sanctioned by the United States like Iran and Russia with which the Big Four cannot do business.[17] For Iran, Exovera’s trade data indicate that Richful has exported salicylic acid, and a market research report lists Iran’s Ravankari Padide Iranian and Sepahan Oil Company among Richful’s main overseas customers.[18] Richful’s ambitions are stated in the company’s August 2023 semi-annual report:

> *With the intensification of Sino-American trade friction in recent years, the country [i.e., China] has fully realized the importance of import substitution. As a foreign-dominated industry, the lubricant additive industry has a large market space for import substitution. At the same time, the rise of the anti-globalization trend in recent years, especially the superposition of geopolitical conflicts, has brought*

[b] In 2023, approximately 73.96% of Richful’s revenue came from the export of lubricant additive products.

major challenges to the global lubricant additive supply chain, and also brought rare development opportunities for competitive new entrants in the industry.[19]

Unsurprisingly, Richful's sudden and massive increase in lubricant additives sales to Russia coincided with dramatic increases in operating revenue and state support. Between 2021 to 2022 Richful's operating revenue increased by over 280% according to its 2023 Annual Report.[20] Additionally, in 2023 Richful received 11,072,134.06 RMB (est. $1.5 million USD) in Chinese government subsidies, an almost 500% increase from state support received in 2021.[21]

Since 2021 Richful's sharply increased research and development budgets as well as its collaboration with Russian counterparts strongly suggest the company is attempting to reverse-engineer American lubricant technology. In 2022, Richful's R&D budget more than doubled, increasing from $6.5 million USD to $14.6 million USD, and to $16.5 million USD in 2023.[22] A review of Exovera's trade data also shows that the collaboration between Richful and GPN-SM may have gone further than simple customer support. In August 2023 GPN-SM exported one kilogram of Lubrizol 5915 additive to Richful as a "sample for research work." Lubrizol 5915 is a pour point depressant, a class of lubricant additive designed to help lubricants flow evenly while at very low temperatures—essentially antifreeze for lubricants.[23][24] Exovera analysts have not found any evidence that Richful currently produces pour point depressants, so it is inferred that GPN-SM is attempting to support Richful's R&D of a lubricant additive that would be particularly important for Russian military operations during the winter or in the Arctic.

Richful's Overseas Expansion into the United States and the Middle East

Since 2021 Richful has established new subsidiaries and offices abroad, including in the United States. By the end of 2023 Richful had at least eight subsidiaries, including one overseas subsidiary in Singapore (Richful Lube Additive (Singapore) Pte. Ltd)[25] and one subsidiary in Hong Kong (Richful Lube Additive (Hong Kong) Co., Ltd. / 瑞丰润滑油添加剂（香港）有限公司).[26] By mid-2024, Richful established three more subsidiaries, including one in the United States and one in Dubai.[27]

Richful's Hong Kong subsidiary has a wholly owned U.S. subsidiary called Richful Lube Additive (America) Inc., which was registered in the Commonwealth of Virginia in April 2024. Its principal office address is in Hampton, Virginia, near one of America's busiest ports, three miles from Newport News Shipbuilding, and across the James River from largest U.S. naval base at Norfolk.[28]

Richful Hong Kong also established the wholly-owned Richful Lube Additive Trading Middle East FZE, which completed registration on 10 June 2024, with registered capital of 1 million dirhams (est. $272,000 USD in 2024) and all stock owned by Richful Hong Kong.[29] This subsidiary's establishment appears to build off Richful's preexisting presence in Dubai's Innova Refining and Trading FZE, based on rental and other charges paid to the FZE.[30] It is not clear when the Dubai presence began, but the semi-annual report for the first half of 2023 reports that Richful "signed a warehousing and storage contract with ISS Global Forwarding UAE LLC.[31]

Implications: Lubricant Additives and Russia's Richful Dependency

Russia's overwhelming dependency on a single Chinese supplier of lubricant additives may present a major opportunity for economic pressure against Russia.

- Western sanctions and fear of further trade restrictions have already forced Russian manufacturers to turn to alternative suppliers and consequently created what may be a strategic vulnerability. A disruption in supply of lubricant additives would likely degrade the Russian military's sustainment of weapons and other platforms used against Ukraine.

- Richful is a Chinese supplier trying to break the global lubricant additive industry dominated by the Big Four and at the same time supply Russian customers that are essential to Russia's war against Ukraine. For now, the company appears to be meeting both objectives but to date does not appear to have faced any pressure to cease its support for Russian customers.

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